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DEVELOPING MATERIALS WITH AN ENVIRONMENTAL FOCUS

The bad news: The worldwide environmental crisis continues to worsen. The good news: More and more teachers and students want to help protect the planet. As one result of this trend toward environmental protection, we see the increasing integration of environmental education in all aspects of the curriculum, including language education. International, regional, national, and local governments and institutions encourage this movement. Today, language materials commonly feature units on the environmental, along with other global concerns.

This chapter discusses how to develop materials which integrate environmental education in language instruction. The project began as a collaboration between three members of an RELC course (from Malaysia, Singapore, and Thailand), myself (an RELC lecturer from the U.S.), and an instructor in RELC's Language Teaching Institute (from the U.K.), who joined us later. We shared a common interest in encouraging the use of the environment as a theme in language instruction. As our students differed widely, we decided to develop materials for a range of proficiency levels, in the hope that the materials could serve as a model for teachers and materials developers, as well as being used in classrooms.

ENVIRONMENTAL EDUCATION

Environmental education began to become well-known about 1970 as a response to increasing levels of environmental destruction. In 1975, the United Nations established the International Environment Education Programme (IEEP). The IEEP formulated six objectives for Environmental Education (IEEP, 1975). The text of these objectives follows below, accompanied by my comments and examples of a way that each can be achieved.

1. Awareness

To help individuals and social groups acquire an awareness of and sensitivity to the total environment and its allied problems. For example, people reading a passage about air pollution could make students aware of this problem and the dangers it poses.

2. Knowledge

To help individuals and social groups acquire basic understanding of the total environment, its associated problems and humanity's critically responsible presence and role in it. For example, a text for listening comprehension could include information which would increase students' knowledge about the causes of air pollution and possible solutions to the problem.

3. Attitude

To help individuals and social groups acquire social values, strong feelings of concern for the environment and the motivation for actively participating in its protection and improvement. For example, a story or song about endangered species could encourage students to care about protecting such creatures.

4. Skills

To help individuals and social groups acquire the skills for solving environmental problems. These include scientific and technological skills, but also language skills. For example, students can use their language ability to write pamphlets informing people about the risks caused by air pollution or letters to corporations or government bodies. Similarly, oral language skills would be important in convincing people to take action to decrease air pollution.

5. Evaluation Ability

To help individuals and social groups evaluate environmental measures and education programmes in terms of ecological, political, economic, social, aesthetic and educational factors. While everyone agrees that we must do something to protect the environment, there are many disagreements about how to do it. For instance, when they go shopping, students need to use reading and reasoning skills to evaluate which products are environmentally friendly or which are unnecessary.

6. Participation

To help individuals and social groups develop a sense of responsibility and urgency regarding environmental problems; to ensure appropriate action to solve those problems. All the other five objectives come to nothing if students and others don't translate their awareness, knowledge, attitudes, skills, and evaluation ability into action.

In looking at existing environmental materials, we noticed that most stopped at the awareness or knowledge levels. While these levels form a necessary foundation, we felt that, in particular, most materials lacked objective six: participation. Thus, for many of the lessons we included ways that students can be actively involved in protecting the environment, in addition to including a range of the other objectives.

METHODOLOGICAL FOUNDATIONS

The growth of environmental education reflects a new way that humans view nature. We believe that many of the changes in human's view of the environment have parallels in current trends in language teaching methodology. Table 1 presents an overview of these parallels. (For more detailed discussion, see Jacobs, 1993, 1995.)

TABLE 1**Trends in Language Instruction and their Environmental Parallels**

#	New Views of the Environment and their Implications	New Trends in Instruction and their Implications
1	View: Nature has the right to be active and exist independent of people. Examples: Nature reserves; protection of endangered species.	View: Students should be active; Independence should be encouraged. Implications: Learner-centredness; Education linked with the communities where students live.
2	View: Diversity in nature is recognized and encouraged. Examples: Protecting biodiversity.	View: Diversity among students is recognized and encouraged. Implications: Learner-centredness; Using methods which suit a variety of different learning styles and intelligences.
3	View: Nature exists best as an integrated whole. Examples: Protecting the entire web of life.	View: Students learn best when knowledge is presented as an integrated whole. Implications: Integrated curriculum; Theme/Content based instruction.
4	View: Concern for the long-term effect on the environment of the production process. Examples: Alternative energy; reusing and recycling materials; reducing the amount used.	View: Concern for the process and long-term effect of instruction. Implications: Learning how to learn; Thinking skills; Intrinsic motivation; Links with the communities where students live.
5	View: Humans should join with nature. Examples: More time spent on outdoor activities; real plants in homes.	View: Teachers should join with students. Implications: Teachers read and write along with students; Before and while students and teachers collaborate, teachers model the behaviours they want students to use.
6	View: Cooperation, not competition, between nature and humans is emphasized. Examples: We seek to live with nature, not to conquer it; not using products made from endangered species.	View: Cooperation, not competition, between students is emphasized. Implications: Cooperative learning techniques; Collaborative skills taught.

To summarize, we endeavoured to develop materials which combined the U.N.'s six environmental education objectives - knowledge, awareness, attitude, skills, evaluation ability, and participation - and the methodological features in Table 1 - learner-centredness, links with the communities where students live, diversity of learning formats, curricular

integration, thinking skills, teachers as participants and models, and cooperative learning. Of course, few of the units and lessons we developed include every one of these objectives and features.

A SAMPLE UNIT

The lesson below illustrates some of the ideas in the two previous sections. I use italics to provide explanations of our decision-making process.

PACKAGING

Source: Adapted from Howe & Disinger, 1990

Level: All levels High Beginner and above

Environmental Focus: Being a green consumer

Language Focus: Similarity and difference

Time: 40 minutes

Materials: any of the following - nutshell, orange peel, banana peel, paper shopping bag, glass bottle, plastic shopping bag, plastic bubble packing, styrofoam container, plastic wrapping.

Introduction

Many products that we buy come with large amounts of unnecessary packaging. In this two-session unit, students focus their attention on the decisions they make as consumers. Many important thinking skills are involved, such as categorizing, comparing and contrasting, identifying cause and effect relations, giving reasons, problem solving, and evaluating. This unit will be more real if students investigate what recycling programs exist in their area, as this will differ from place to place and has some effect on the categorizing part of the activity.

Suggested Procedure

Using the word Suggested encourages teachers and students to modify the lesson as they see fit.

Session 1

Steps 1 and 2 attempt to increase student awareness (environmental education objective 1) that not all types of packaging are the same in their effect on the environment. The lesson builds students' knowledge (environmental education objective 2) of which types of packaging are environmentally friendly.

Step 1 Discuss with students that there are three types of packaging and show examples of each:

- a. Packaging from nature: the nutshell, orange peel, and banana peel.
- b. Packaging that can be easily recycled or reused: the paper shopping bag, glass bottle, and plastic shopping bag.
- c. Packaging that cannot be easily recycled or reused: the plastic bubble packing, styrofoam container, and plastic wrapping.

Step 2 Talk about the source of each type of packaging, e.g., paper bags come from trees, and plastic comes from petroleum.

Step 3 links school to the communities where students live (language instruction trend 1), because they save packaging that they, their families, and neighbours use. Learner-centredness (language instruction trend 1) comes in here because students generate some of the materials used in the lesson and talk about their own lives.

Step 3 For the next week, students save types of packaging to bring to school.

Session 2

In Step 1, groups of students cooperate (language instruction trend 6) to complete a task. Each individual member is accountable to their group for bringing in packaging. The task calls on students to use the thinking skill (language instruction trend 4) of categorizing. This skill and the procedure of creating a table to organize information can be applied to all types of learning.

Step 1 In small groups, students fill in the accompanying table about the packaging which each group member brought to school: one table per group.

In Step 2, there is a clear language focus, similar to that in Hutchinson and Waters' model. Thus, curricular integration (language instruction trend 3) exists between the areas of language (stating similarity and difference), social studies (government, corporate, and consumer policy toward packaging), and science (which materials can be recycled).

Step 2 Students write sentences comparing and contrasting packaging which is necessary with that which is unnecessary, explaining why. The examples in the Language Corner may be helpful here. Students may also want to speculate on why the unnecessary packaging is used, e.g., to make the product look nicer.

Step 3 encourages participation (environmental education objective 6) by students and provides an opportunity for teachers to be models and fellow participants (language instruction trend 5). Developing ideas for how to reduce packaging involves problem-solving, an important thinking skill (language instruction trend 4). Making choices about packaging requires evaluation ability (environmental education objective 5), because there are many options regarding packaging, each with its pluses and minuses.

Step 3 One at a time, students in their groups discuss how they, their families, a company, etc. can reduce the amount of packaging they use, or what they already do to use less packaging. Later, the whole class, including the teacher, can share their good ideas. To promote attentive listening, students share not their own ideas, but the ideas of their groupmates.

Variations

In Variation 1, students have another opportunity for participation (environmental education

objective 6). The diverse learning formats (language instruction trend 2) of recording radio commercials and drawing posters combine with other formats from earlier in the lesson: teacher lecture, hands-on with the packaging, discussion with groupmates, completing a table, writing short texts based on information in the table, and whole class discussion. Here, students also develop communication skills (environmental education objective 4) important for involving others in environmental protection.

1. In groups, students develop radio commercials, posters, etc. to disseminate their suggestions. These should be presented to the class. Students can look for opportunities to do their presentations elsewhere, e.g., other classes at their school or at other schools, for community groups.

Variation 2 provides another opportunity to develop evaluation ability (environmental education objective 5).

2. Students discuss whether protecting the environment depends mostly on what individuals do or whether the burden falls more on the shoulders of governments and big companies.

Language Corner - Similarity and Difference

Similarity

Structure 1: Statement about Item 1 + *Similarly* + statement about Item 2.

Example: The purpose of an orange peel is to protect the fruit. Similarly, the purpose of a paper bag is to protect the things we buy.

Structure 2: Item 1 and Item 2 *both* + statement of how they are similar.

Example: Orange peels and paper bags both come from nature.

Difference

Structure 1: Statement about Item 1, + *but* + statement about Item 2.

Example: Orange peels are necessary, but sometimes paper bags are not necessary.

Structure 2: *While* + statement about Item 1, + statement about Item 2.

Example: While paper bags are easily reused, styrofoam containers are not.

PACKAGING: WHERE IT COMES FROM AND HOW IT'S USED

[illegible]

HOW WE DEVELOPED THE LESSONS

The five writers each worked alone to develop the first draft of lessons, passed them around to get feedback from the other authors, arranged for them to be trialed by other teachers or by ourselves (if other teachers did the trialling we tried to be there to observe), and then made further changes.

We used two procedures in developing the materials:

- (1) Most often we started with a language learning technique we liked and added environmental content. In addition to techniques we had already been using in our teaching, we also borrowed techniques from colleagues and looked through language teaching materials to identify valuable techniques.
- (2) In the other procedure we started with a text we liked with important environmental content and added a language element. Sources for such texts included daily newspapers, government publications on the environment, and publications from environmental organizations.

Besides packaging, other environmental education topics include deforestation, extinction of plant and animal species, the beauty of nature, pollution (air, water, and noise), traditional peoples' relations with nature, the link between poverty and environmental destruction, recycling and reusing materials, vegetarianism, the greenhouse effect, ozone depletion, global warming, biodiversity, literature and movies with environmental themes, the relative effects of rich and poor people on the environment, consumerism, toxic waste, alternative energy (e.g., solar and wind power), and environmentally friendly products.

Conclusion

When you develop materials about environmental education, people quite properly expect you to practise what you preach. This meant several things for us. In producing the materials, we considered the way we used paper. We tried to print on recycled paper, to use both sides of the paper, and to create lessons that required the minimum use of paper (for handouts, etc.), without sacrificing learning.

Further, in our lives as teachers and citizens, we had many things to consider: how we got to school, e.g., walking, public transport, or car, whether we recycled, e.g., newspapers, cans, whether we reduced the amount of packaging we use, e.g., carrying a cloth bag when going shopping, whether we involved ourselves in local environmental efforts, e.g., signing petitions to protect wilderness land from development, planting trees, and, last but not least, whether we sought appropriate opportunities to use the lessons we had developed, to develop more, and to combine our efforts with those of colleagues.

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